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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/583,714

06/20/2006

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21874 7590 01/28/2010  
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EXAMINER

KOLLIAS, ALEXANDER C

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

01/28/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/583,714	<b>Applicant(s)</b> FUKUDA ET AL.	
	<b>Examiner</b> ALEXANDER C. KOLLIAS	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 5-10, 13 and 14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 11 and 12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>20060620, 20070830</u> . | 6) <input type="checkbox"/> Other: ____.  |

### **DETAILED ACTION**

1. Applicant's election with traverse of Group I in the reply filed on 11/16/2009 is acknowledged. The traversal is on the ground(s) that the previous Office Action did not establish an undue search burden of the claims of the four groups as specified by MPEP 803 . This is not found persuasive because the instant application is a national stage entry filed under 35 U.S.C. 371 and is therefore not subject to US restriction practice but rather subject to lack of unity practice, see MPEP 1893.03(d). It is noted that undue search burden is not a criterion in lack of unity analysis. The test is whether or not special technical features can be established. It is noted that inventions listed as Groups I-II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features as set forth in Paragraph 2 of the previous Office Action.
2. Applicant's arguments that the applied reference in the election/restriction disclosed a composition comprising water while present claims 11 and 13 exclude water are not found to be convincing given that the common technical feature as recited presently in Groups I and II does not include the exclusion of substantial amounts of water from the composition.
3. Finally, Applicant's traversal of the election/restriction is not germane to the Sawa reference utilized in the restriction. It is noted that while Sawa does not disclose the thickness of the metallic pigment, attention is drawn to Nowak et al (US 6,503,965) which discloses an ink composition comprising metallic pigments with a particle diameter of 1 to 200 microns and a

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thickness in the range from 0.1 to 2 microns and binders such as melamine and polyamides resins (Column 8, Lines 25-46 and Column 10, Lines 14-16) .

The requirement is still deemed proper and is therefore made FINAL.

4. Claims 5-10 and 13-14 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction requirement in the reply filed on 11/16/2009.

5. Claim 11 recites that the ink “substantially contains no water”. It is noted that the cited limitation was introduced by the preliminary amendment filed 6/20/2006. Given that the present application was filed under 35 U.S.C. 371, claim or claims containing this limitation are only accorded the preliminary amendment date or the actual filing date of 6/20/2006 of the present application and not the international filing date of 12/25/2003 which the remaining claims are entitled to based on the priority of PCT/JP2003/016814.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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8. Claim 11 recites that the ink of claim 1 “substantially contains no water”. The phrase “substantially” renders the scope of the claim indefinite as it is not clear water amount of water, if any, may be contained in the presently claimed ink composition. Is it for example 5 wt %, 2 wt. %, 1 wt. %?

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Kurata et al (US 5,133,805) as evidenced by Inoue et al (US 5,549,739) and Schrempp et al (US 3,849,150).

Regarding claims 1 and 11, Kurata et al discloses a paint composition comprising an plate-like iron oxide pigment having has an upper bound average particle diameter of 5.0 microns and an upper bound average lamellar thickness of 500 A (1 A = 0.0001 microns, 0.05 microns) (Column 3, Lines 60-66). It is noted that the diameter and thickness of the pigment in within the range of the recited thickness (0.01 to 0.1 microns) and diameter (5 to 25 microns) recited in claim 1. Additionally, the reference discloses that the paint composition comprises amino resins, i.e. melamine resin (Column 7, Lines 37-41 and Lines 64-68, Column 8, Lines 1-3 and column 15, Example 19, Lines 35-37). From the disclosure of the reference that the

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composition comprises melamine resins, it clear that this resin comprises amino groups as presently recited in claim 1.

While the reference does not explicitly disclose the pigment as a “metal” as presently claimed, it is the Examiner's position that the pigment disclosed by the reference is a metal. Support for the Examiner's position is found in Inoue et al which discloses iron oxide as being a metal pigment (Column 4, Lines 11-12). Thus, based on the dimensions disclosed by Kurata and evidence in Miyazaki, it is clear that the pigment disclosed by Kurata is a metal thin film fragments as presently recited.

Regarding the resin, disclosed by Kurata, while the reference does not disclose that the melamine resin is a binder as presently claimed, it is clear the Examiner's position that the resin disclosed by the reference is a binder as presently claimed. Support for the Examiner's position is found in Schrempp et al which discloses that melamine resin is a binder, see Col 2 Lines 61-68 and Column 3, Lines 1-5 of Schrempp et al.

While there is no disclosure in Kurata et al that the composition is an ink as presently claimed, applicants attention is drawn to MPEP 2111.02 which states that “if the body of a claim fully and intrinsically sets forth all the limitations of the claimed invention, and the preamble merely states, for example, the purpose or intended use of the invention, rather than any distinct definition of any of the claimed invention's limitations, then the preamble is not considered a limitation and is of no significance to claim construction”. Further, MPEP 2111.02 states that statements in the preamble reciting the purpose or intended use of the claimed invention must be evaluated to determine whether the purpose or intended use results in a structural difference between the claimed invention and the prior art. Only if such structural difference exists, does

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the recitation serve to limit the claim. If the prior art structure is capable of performing the intended use, then it meets the claim.

It is the Examiner's position that the preamble does not state any distinct definition of any of the claimed invention's limitations and further that the purpose or intended use, i.e. ink, recited in the present claims does not result in a structural difference between the presently claimed invention and the prior art composition and further that the prior art structure which is a paint is identical to that set forth in the present claims is capable of performing the recited purpose or intended use.

Regarding claim 11, Kurata as evidenced by Miyazaki and Schrempp et al teaches all the claim limitations as set forth above. Additionally, Kurata discloses organic solvents utilized in the compositions, i.e. toluene, toluene, xylene, etc. From the disclosed solvents, it is clear that water is not disclosed nor intended to be utilized. Hence, the composition as disclosed meets the limitations in claim 11 drawn to a composition which is substantially contains no water.

In light of the above, it is clear that Kurata as evidenced by Miyazaki et al and Schrempp et al anticipates the presently recited claims.

### ***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

13. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

14. Claims 1 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miekka et al (US 5,672,410) in view of Leach et al (see attached pages of *The Printing Ink Manual*).

Regarding claims 1, Miekka et al discloses a finely divided this metal flakes utilized in ink compositions (Abstract, Column 3, Lines 49-54, Column 7, Lines 46-50). The reference discloses that the metal pigments have an average diameter of about 25 to 50 microns and a



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thickness of from 100 to 500 angstrom (0.01 to 0.05 microns) (Column 6, Lines 40-50 and Column 7, Lines 36-45).

While the reference discloses ink embodiments comprising a binder, i.e. nitrocellulose, see Col. 10 Lines 30-50, the reference does not disclose that the binder resin has an amino group.

Leach discloses polyamides resin which are not only compatible with nitrocellulose but also, when utilized in flexographic and gravure inks, confer excellent adhesion to treated polyethylene, polypropylene, polystyrene, as well as other substrates (Page 236). Additionally, high gloss, resistance to fats and grease, heat sealability, fast solvent release and clean printing properties are obtained utilizing polyamide resins (Page 236). Given that the reference discloses that polyamides confer adhesion to substrates, it is clear that the resin disclosed by the reference functions as a binder as presently claimed. From the repeating units of polyamides depicted on Page 235 of the reference, it is clear that polyamides comprising amino and carboxylic acid groups.

Given that Miekka et al discloses an ink composition comprising metal flake pigments and nitrocellulose, and, given that the reference does not explicitly prohibit other ingredients, in light of the particular advantages provided by the use and control of polyamide resins utilized in ink compositions as taught by Leach et al, it would therefore have been obvious to one of ordinary skill in the art to include such resin binders in the composition disclosed by Miekka et al with a reasonable expectation of success.

Regarding claim 11, the combined disclosures of Miekka and Leach teach all the claim limitations as set forth above. Additionally, Miekka discloses an ink composition, comprising

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solvents such as methyl cellosolve (Column 7, Lines 50-55). Thus, it is clear that the ink compositions disclosed by Miekka are free of water as presently claimed.

Regarding claim 12, the combined disclosures of Miekka and Leach teach all the claim limitations as set forth above. Additionally, Miekka discloses a process of forming the metal pigment by vapor deposition of aluminum and sputtering (Column 6, Lines 41-59).

15. Claims 1, 4, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nowak et al (US 6,503,965) in view of Schrempp et al (US 3,849,150).

Regarding claim 1, Nowak et al discloses an ink composition comprising metallic pigments such as aluminum, copper and bronze pigments which have a thickness from 0.1 to 2 microns and a diameter from about 1 to 200 microns (Column 8, Lines 25-46). It is recognized, that the present claims recite average thickness and diameter, while Nowak et al discloses pigment thickness and diameter. However, given the broad range of thickness and diameter of the metal pigments disclosed by the reference, absent evidence to the contrary, it is the Examiner's position that the thickness and diameter of the pigments disclosed by the reference meet the recited average thickness and diameter recited in claim 1.

Additionally, Nowak et al discloses resin such as polyamide and melamine resin, i.e. polymers comprising amino groups (Column 10, Lines 5-25). While the reference does not disclose that the melamine resin is a binder as presently claimed, it is clear the Examiner's position that the resin disclosed by the reference is a binder as presently claimed. Support for the

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Examiner's position is found in Schrempp et al which discloses that melamine resin is a binder, see Col 2 Lines 61-68 and Column 3, Lines 1-5 of Schrempp et al.

Regarding the pigment diameter and thickness disclosed by Nowak et al, It is well settled that where the prior art describes the components of a claimed compound or compositions in concentrations within or overlapping the claimed concentrations a prima facie case of obviousness is established. See *In re Harris*, 409 F.3d 1339, 1343, 74 USPQ2d 1951, 1953 (Fed. Cir 2005); *In re Peterson*, 315 F.3d 1325, 1329, 65 USPQ 2d 1379, 1382 (Fed. Cir. 1997); *In re Woodruff*, 919 F.2d 1575, 1578 16 USPQ2d 1934, 1936-37 (CCPA 1990); *In re Malagari*, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974).

Regarding claim 11, the disclosure of Nowak and evidence in Schrempp et al teach all the claim limitations as set forth above. Additionally, it is noted that Nowak discloses the use of high boiling point organic solvent in the ink composition, i.e. above 100 degrees C such as alcohols, polyols, hydrocarbons, etc (Abstract, Column 4, Lines 15-27, Column 6, Lines 26-39). Based on the disclosure that the solvents utilized in the ink composition have boiling point of greater than 100 degrees C and based on the types of solvents disclosed, it is clear that the disclosed ink composition does not contain water.

Regarding claim 4, the disclosure of Nowak and evidence in Schrempp et al teach all the claim limitations as set forth above. Additionally, it is noted that Nowak discloses that pigment comprises from about 0.1 to about 60 wt % of the ink composition (Column 3, Lines 60-67).

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The reference discloses all the claim limitations as set forth above. However, while the reference discloses resins comprising amino groups, i.e. melamine, the reference does not disclose that the resin has an amino group concentration of 50 to 500 mmol/kg. However, it is the examiner's position that the amount of amino group in the resin is a result effective variable because changing them will clearly affect the type of product obtained. See MPEP § 2144.05 (B). Case law holds that "discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art." See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In view of this, it would have been obvious to one of ordinary skill in the art to utilize appropriate amount of amino groups, including those within the scope of the present claims, so as to produce desired end results.

Regarding the amount of pigment disclosed by the reference, it is well settled that where the prior art describes the components of a claimed compound or compositions in concentrations within or overlapping the claimed concentrations a prima facie case of obviousness is established. See *In re Harris*, 409 F.3d 1339, 1343, 74 USPQ2d 1951, 1953 (Fed. Cir. 2005); *In re Peterson*, 315 F.3d 1325, 1329, 65 USPQ 2d 1379, 1382 (Fed. Cir. 1997); *In re Woodruff*, 919 F.2d 1575, 1578 16 USPQ2d 1934, 1936-37 (CCPA 1990); *In re Malagari*, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974).

16. Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nowak et al (US 6,503,965) and Schrempp et al (US 3,849,150) as applied to claims 1, 4, and 11 above, and in view of Molloy et al (US 6,476,096).

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The discussion with respect to Nowak et al and Schrempp et al as set forth in Paragraph 17 above is incorporated here by reference.

Regarding claims 2-3, the combined disclosures of Nowak et al and Schrempp et al disclose all the claim limitations as set forth above. However, the references do not disclose that the ink composition comprising an acid anhydride.

Molloy et al discloses, the use of acid anhydrides in non-aqueous ink compositions, i.e. succinic anhydride which are added to the ink compositions in order to enhance the stability of the ink composition (Abstract, Column 4, Lines 31-36, Lines 53-57 and Lines 61-67). Furthermore, the reference discloses that anhydride is added to the ink composition in an amount up to 50 wt %, based on the amount of pigments (Column 10, Lines 29-31, claim 11). It is noted that the anhydride disclosed by the reference, meets the anhydride moiety recited in claims 3, i.e.  $-C(=O)OC(=O)-$ .

Given that both Nowak et al and Molloy et al are drawn to ink compositions comprising pigments, and resins, and, given that Nowak does not explicitly prohibit other ingredients, in light of the particular advantages provided by the use and control of the acid anhydride as taught by Molloy et al, it would therefore have been obvious to one of ordinary skill in the art to include such compounds in the composition disclosed by Nowak et al with a reasonable expectation of success.

### ***Conclusion***

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEXANDER C. KOLLIAS whose telephone number is (571)-270-3869. The examiner can normally be reached on Monday-Friday, 8:00 AM -5:00 PM EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571)-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. C. K./  
Examiner, Art Unit 1796

/Vasu Jagannathan/  
Supervisory Patent Examiner, Art Unit 1796